

# Water Management Update and Report – Hunter Gas Project

BCCC Meeting # 22

**Presented by: John Ross**

6 September 2010

Mt Broke Wines



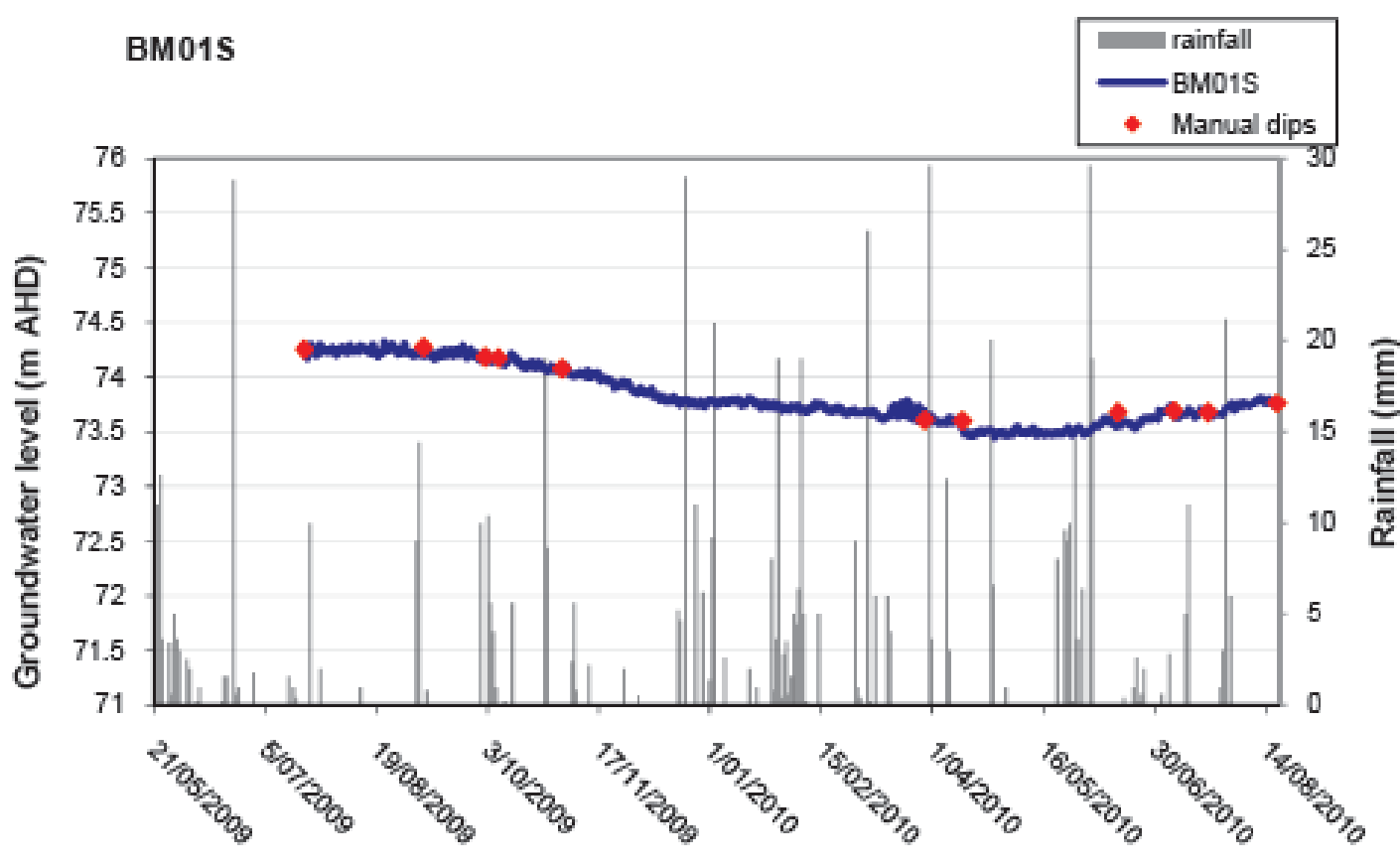
# Groundwater update since July Meeting

## Broke - HB01 and HB02 Flow testing program

- > Pumped volumes as at 24 August – HB01 0.85 ML and HB02 1.07 ML – (combined volume 1.92 ML) – rate has reduced to ~0.64 KL/d (rates less than 0.01 litres per second)
- > Water level monitoring program (seasonal changes in WLs continue):
  - » No WL declines due to flow testing at BM01 & BM03 sites
  - » Erratic data at Xstrata piezometer P7b but WLs higher than at start
- > Water quality monitoring program:
  - » AGL monitoring HB01 and HB02 water quality weekly
    - HB01 showing some slight salinity oscillations since pumping was reduced to daylight hours
    - Essentially no change at HB02
  - » Inline WQ monitoring is an effective check of trends
- > Discussions with Garry Willgoose about WL and WQ data sets and trends

# Groundwater update since July Meeting

Broke - HB01 and HB02 Flow testing program

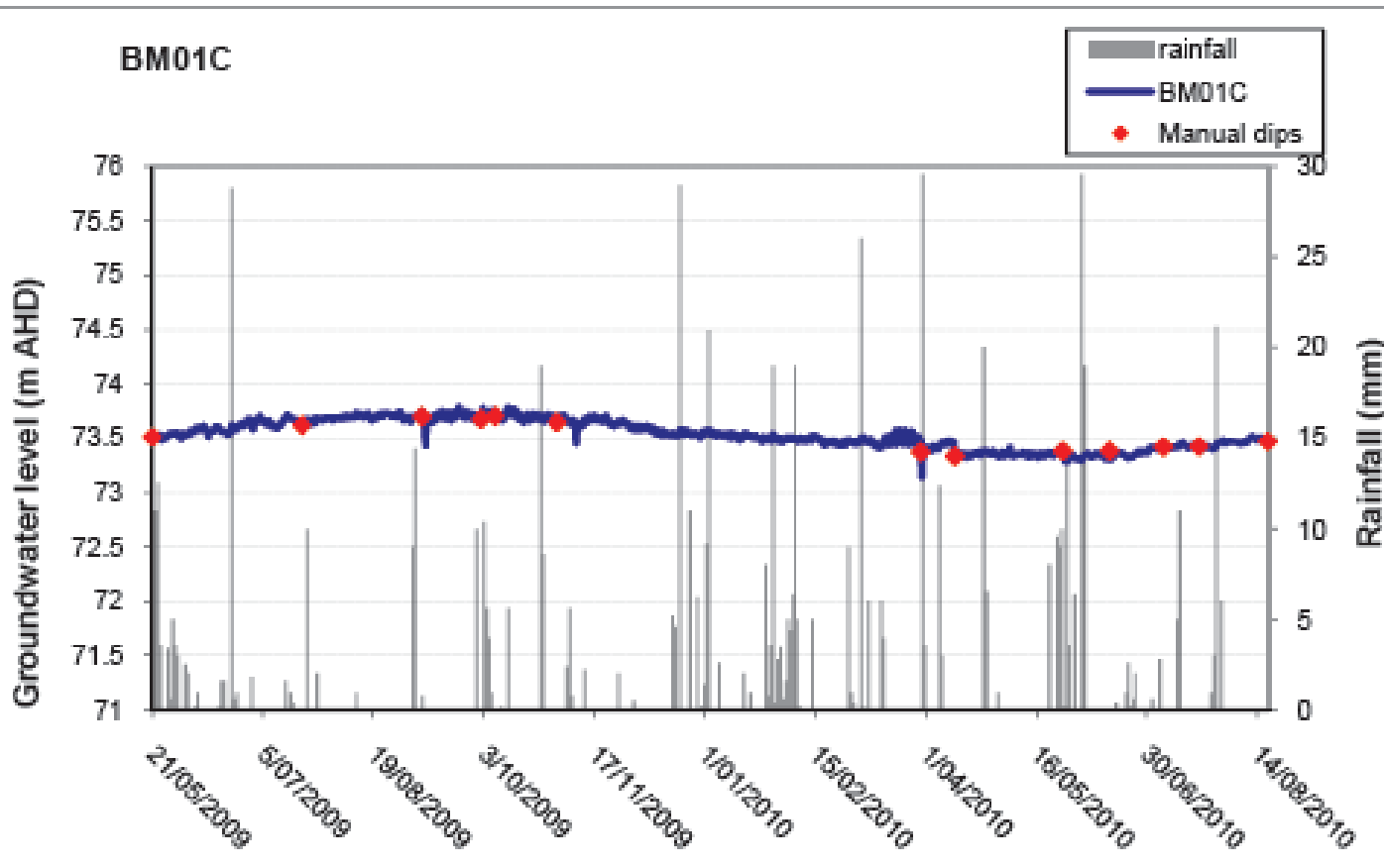


Shallowest alluvium at  
BM01 site ~6m deep

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Broke - HB01 and HB02 Flow testing program



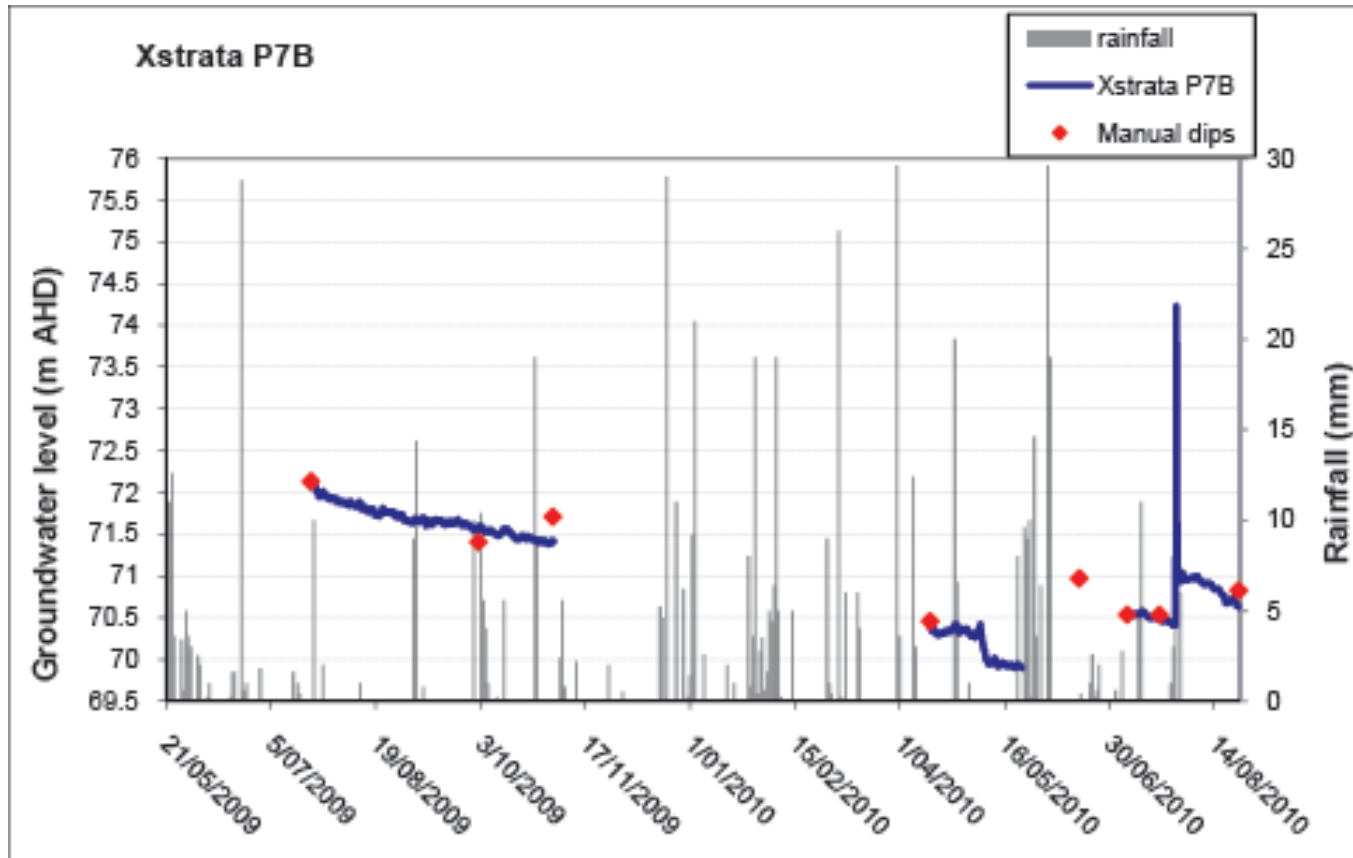
**Wybrow Coal Seam at  
BM01 site ~220m deep**

These are examples of the water level hydrographs from nearby monitoring bores – others available

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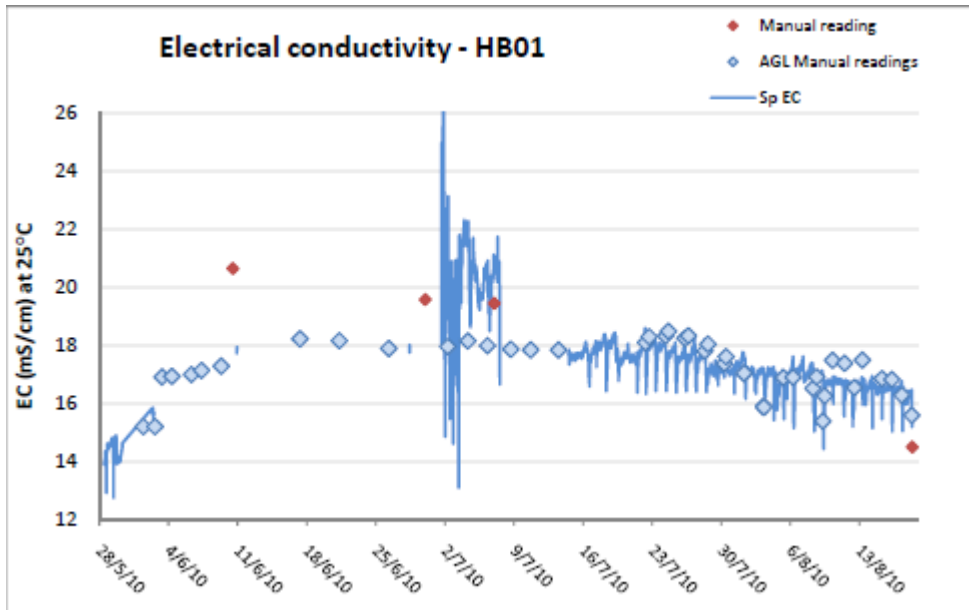


**Wybrow Coal Seam at P7B site**

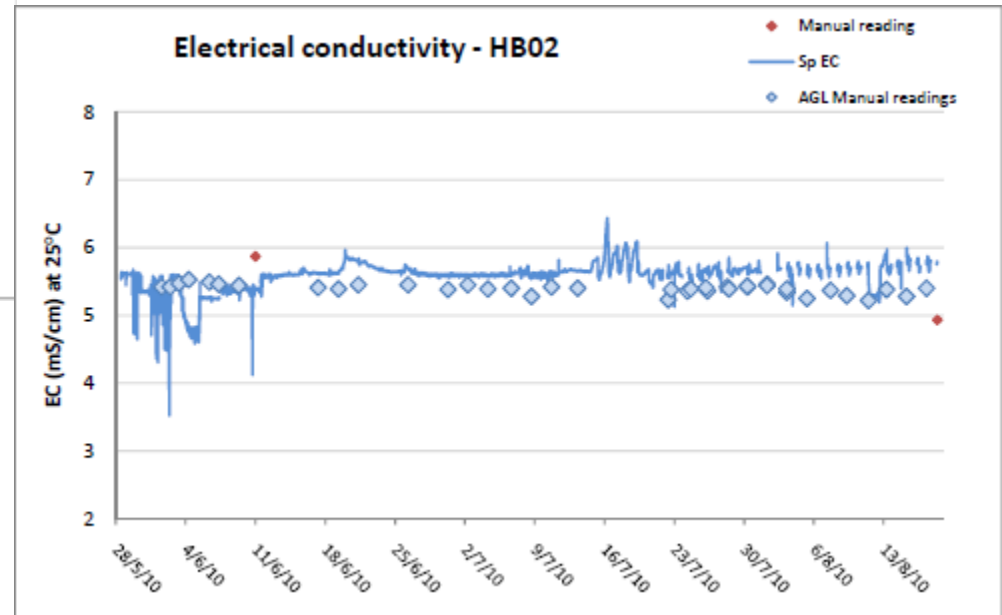
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# Groundwater update since July Meeting

## Broke - HB01 and HB02 Flow testing program



### In-line quality monitoring of EC at HB01 and HB02

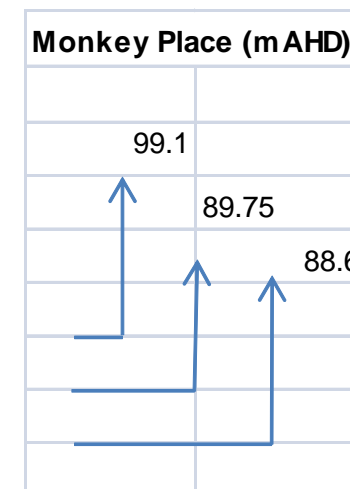


Note that for both graphs the EC units are in mS/cm – to convert to normal  $\mu\text{S}/\text{cm}$  units multiple by 1000

# Groundwater update since July Meeting

## Broke - Monkey Place Monitoring Program

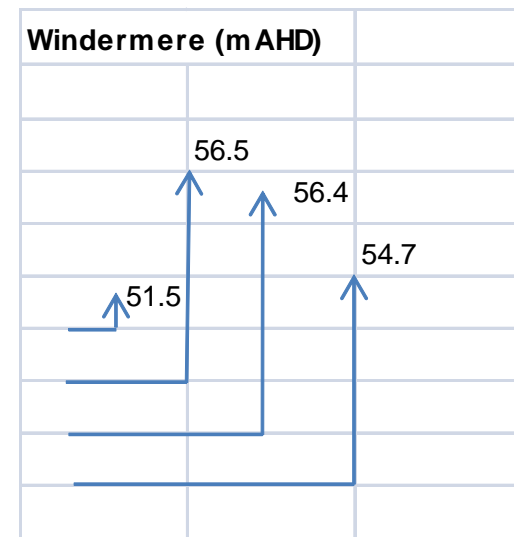
- › Monkey Place (completed 23 June 2010):
  - › 3 monitoring bores (alluvium, first fractured rock, Wybrow CS)
  - › Site reinstated
  - › Continuous WL loggers installed in all bores
  - › Baseline WQ samples obtained
- › Water level data
  - › Potential for downward flow
- › Water quality data
  - › Alluvium – 269  $\mu\text{S}/\text{cm}$
  - › First fractured rock – 5662  $\mu\text{S}/\text{cm}$
  - › Wybrow CS – 6365  $\mu\text{S}/\text{cm}$



# Groundwater update since July Meeting

## Bulga - Windermere Monitoring Program

- > Windermere (completed 28 July 2010):
  - » 4 monitoring bores (alluvium, first fractured rock, Wybrow CS, and Wambo CS)
  - » Large water inflows between 30 and 50 mbgl
  - » Approx 400,000 L produced during construction
  - » Site reinstated
  - » Continuous WL loggers installed in all bores
  - » Baseline WQ samples obtained
- > Water level data
  - » Potential for upward flow
- > Water quality data
  - » Alluvium – 19522  $\mu\text{S}/\text{cm}$
  - » First fractured rock – 9935  $\mu\text{S}/\text{cm}$
  - » Wybrow CS – 9378  $\mu\text{S}/\text{cm}$
  - » Wambo CS – 9686  $\mu\text{S}/\text{cm}$



# Water update since July Meeting

## Dam construction program – Spring Mountain

- › An earthen dam lined with HDPE is proposed for Spring Mountain property to improve irrigation efficiency
- › Maximum 50 ML capacity
- › Designed to mix groundwater from (alluvial) irrigation wells with PID water
- › Designs still being finalised
- › Likely to be constructed before end of 2010
- › Blending CSG water and irrigating is being considered on a trial basis BUT is not part of the current development
- › Additional approvals are required to blend CSG water and irrigate